Please replace the paragraph beginning on page 2, line 12, with the following rewritten paragraph:

modulation method that uses Turbo codes as element codes. Fig. 2(b) is an encoder used in 16QAM (quadrature amplitude modulation). Fig. 2(c) shows a construction of a tone in a multicarrier modulation and demodulation method. Referring to Figs. 2(a)-2(c), a Turbo encoder 1 receives an input of two information bits and outputs two information bits and 2 redundancy bits. A conversion 2 subjects a bit sequence output from the Turbo encoder to conversion. A mapper 3 converts the bit sequence converted by the conversion 2 into the signal points.

Please replace the paragraph beginning on page 2, line 20, with the following rewritten paragraph:

--Fig. 3 shows a construction of the Turbo encoder 1 of Figs. 2(a)-2(c). Referring to Fig. 3, the Turbo encoder 1 includes a recursive systematic convolutional encoder 11, interleavers 12 and 13, a recursive systematic convolutional encoder 14 and a deinterleaver 15.

Please replace the paragraph beginning on page 4, line 5, with the following rewritten paragraph:

--Figs 4(a)-4(c) shows constellations of signal points that occur in various digital modulation techniques. Fig. 4(a) shows a

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constellation of signal points in 4PSK (phase shift keying), Fig. 4(b) shows a constellation of signal points in 16QAM, and Fig. 4(c) shows a constellation of signal points in 64QAM. Referring to Fig. 4, symbols A, B, C and D denote cosets, which are determined after the conversion.

Please replace the paragraph beginning on page 4, line 11, with the following rewritten paragraph:

occur in various digital modulation techniques. Fig. 4(a) shows a constellation of signal points in 4PSK (phase shift keying), Fig. 4(b) shows a constellation of signal points in 16QAM, and Fig. 4(c) shows a constellation of signal points in 64QAM. Referring to 4(a)-4(c), symbols A, B, C and D denote cosets, which are determined after the conversion.--

Please replace the paragraph beginning on page 4, line 25, with the following rewritten paragraph:

--When the coset is determined, the mapper 3 receives the coset and the high-order information bit so as to determine the transmitted signal point W or the transmitted signal point V based on the constellation of 4(a)-4(c).

Please replace the paragraphs beginning on page 13, lines 3-17, with the following rewritten paragraph:

method;

Fig. 3 shows a construction of the Turbo encoder of Figs. 2(a)-2(c);

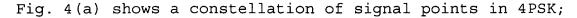


Fig. 4(b) shows a constellation of signal points in 16QAM;

Fig. 4(c) shows a constellation of signal points in 64QAM;

Fig. 4(d) shows a table referred to in order to determine cosets;

Fig 4 (e) shows a table for use in 16QAM of Fig. 4B to determine one of areas E, F, G and H of the transmitted signal point responsive to the transmitted high-order information bit w_3 , w_2 (or v_3 , v_2);

Fig. 5 is a flowchart showing a demodulating method according to a first embodiment of the present invention;

Fig. 6 is a graph showing the probability of decoding error when the decoding according to the invention is performed;

Fig. 7 shows a demodulating apparatus according to a second embodiment of the present invention; and

Fig. 8 (a) shows a comparison between the related art and the present invention about the areas for determination of high-order information bit;

Fig. 8 (b) shows a square Euclidean distance form a nearest signal point;

Fig 8 (c) shows an Euclidean distance from a threshold value; and

Fig 8 (d) shows tables referred to in order to determine cosets: